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CUSCUTA EXALTATA ON QUERCUS VIRGINIANA.

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Most people think of dodder (Cuscuta spp.) as a tangle of fine golden threads covering and attached to low herbaceous plants, but are unaware of a species which parasitizes trees. Cuscuta species are parasitic dicotyledonous plants of the Convolvulaceae family and lack chlorophyll. The plants germinate from seeds and grow tall enough to attach to host plants. After the attachment has been established, the dodder loses its connection to the soil and becomes entirely parasitic on the host plant. Peg-like haustoria penetrate the host tissue and do the work of absorption, connecting directly with the xylem and phloem of the host.

Cuscuta, a genus of 140-150 species worldwide, is a parasite of spotty and irregular distribution. Some species have very restricted host ranges, but most attack a much wider range of hosts. Dodder can kill its host and, when it attacks crop plants, can cause economic losses.

CAUSAL AGENT: Tree dodder, Cuscuta exaltata Engelm., was observed by the Wheelers attacking a live oak tree, Quercus virginiana Mill., in their yard in Bexar Co. west of San Antonio, Texas. Two other parasitized oaks were observed in two neighboring yards, but no more were seen during their five years in Texas. The living tree dodder looked like a red-gold area (Fig. 1) in the dense green tree tops of the scrub live oak forest. On close inspection the stems of the dodder were streaked golden and red (Fig. 3) and formed a tangled mass of vines (Fig. 2), which looked very similar to other species of dodder except for the reddish color and much larger size. It is not confined to Quercus virginiana but also attacks other woody hosts, including species of Diospyros, Juglans, Quercus, Rhus, Ulmus, and Vitis (2,4).

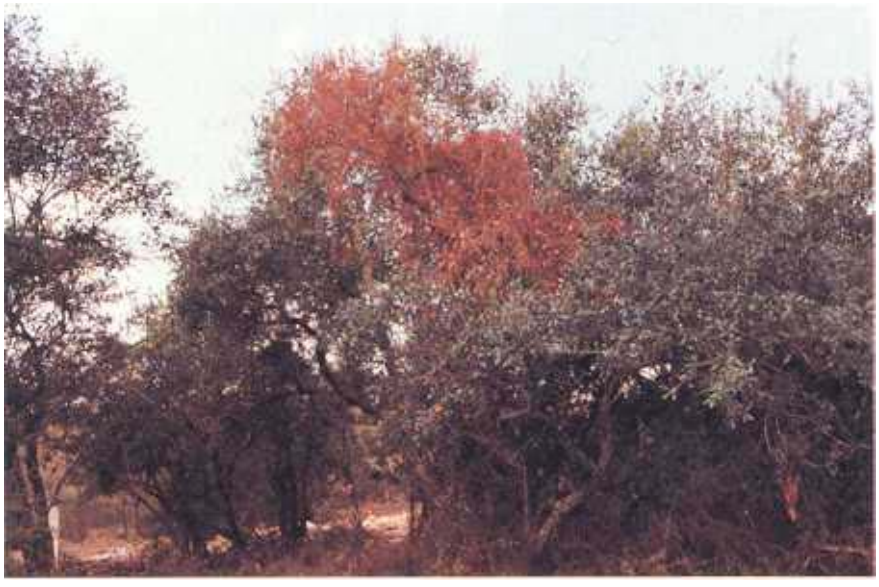

Fig. 1. Cuscuta exaltata in the edge of a scrubby live oak forest in Bexar Co. near San Antonio, Texas. (Photo by Jeanette Wheeler)

DESCRIPTION: Cuscuta exaltata: Parasitic vine without leaves and without or mostly without chlorophyll; stems 1-3 mm thick, twining around and attached to host by haustoria; flowers sessile or subsessile in spicate-paniculate clusters, parts thick and fleshy, each flower subtended by an ovate, obtuse bract; calyx lobes concave, ovate-orbicular, obtuse, overlapping, nearly as long to as long as the corolla tube; corolla 4-5 mm long, cylindrical, lobes obtuse, ovate-orbicular, overlapping, much shorter than the tube, upright to somewhat spreading; scales of 2 dentate or emarginate wings on either side of each filament attachment, toothed above, 1/2-2/3 as long as corolla tube; styles as long as the globose ovary, partially or completed united, but easily separated, stigmas flattened; fruits capsular, circumscissile, ovate-globose, capped by withered corolla, 10 mm long; seeds 3-4 mm long, rostrate and trigonous (1,2,4).

DISTRIBUTION: Tree dodder has been reported only in Florida and Texas. In Florida 4 collections were reported (1,3) from Lake, Palm Beach, Pinellas, and Volusia counties. Division of Plant Industry records show a second collection from Volusia Co. Cuscuta exaltata is a plant mostly of dry woods, both in

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Fig. 2. A tangled mass of Cuscuta exaltata in the branches of a dying live oak tree. (Photo by Jeanette Wheeler)

Fig. 3. Cuscuta exaltata in fruit. The twining vine is attached to the dying branch of a live oak tree. (Photo by Jeanette Wheeler)

Florida and Texas. In Texas it occurs in the South Texas plains and Edwards Plateau. Cuscuta exaltata is a rare member of the genus, and has a very limited, disjunct distribution.

CONTROL: On the advice of the Texas Extension Service, one infested tree was cut and dodder seedlings were destroyed. A pre-emergence herbicide was recommended but was not used. The neighboring infested trees were not cut, but died. No further infestations were observed during the following 4 years of residence there. Control of C. exalatata in Florida normally would not be necessary because of the rarity of this species.

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